<u>REMARKS</u>

- [3] Claims 1-3 were rejected over Jones '337 in view of Carr. This rejection is respectfully traversed.
- (1) The Examiner points to Jones' disclosure of ion bombardment etching and asserts that Carr also discloses ion bombardment etching. The Applicant disagrees because Carr discloses etching in a dilute HF bath, or plasma assisted chemical etching (PACE), for the purpose of exposing sub-surface defects. These etches are disclosed on the second and third text pages. No disclosure of etching by ion bombardment is seen by the Applicant, and the Examiner is requested to provide a citation if he maintains that Carr also discloses ion bombardment etching.
- (2) The chemical processes used by Carr actually *increase* the roughness; this is shown by Table I on the sixth text page. "A sharp increase in roughness is noted as the surface is etched from 0 to 80 nm," writes Carr just above Table I, and on the following page adds, "Further etching causes additional roughening." Since Jones is sharpening a blade with its ion bombardment etching, not testing like Carr, and the person of ordinary skill would not have substituted Carr's chemical process that increases the surface roughness and therefore decreases sharpness.

It is noted that Jones teaches chemical etching as a step preliminary to ion bombardment. Chemical etching is disclosed starting at column 2, line 44.

Jones states at column 3, line 23, that "A combination of abrasive methods and

chemical methods may be used to form the desired *shape* of cutting edge" (emphasis added), and at column 3, line 45, explains, "One of the above described methods may be used to form the desired finished cutting edge. However, a final shaping and finishing can be provided, for example, by ion bombardment." Jones teaches away from chemical etching as a final step in sharpening a blade.

- (3) Carr is from the area of testing optical surfaces and has no disclosed relationship to blades, and the Applicant sees no teaching about optical surfaces in Jones. It is the Applicant, not Jones or Carr, who relates optical surfaces and blades. It is the Applicant, not the person of ordinary skill, who saw the relationship.
- (4) The Examiner points out the surface roughnesses disclosed in Table II on the last page of Carr. With respect, this data relates to diamond-turned optical surfaces (see preceding page) which have been etched by Carr's chemical methods. There is no relationship to ion bombardment, or the blade of Jones. It is noted that Table II, like Table I, also discloses that Carr's processes increase the roughness.
- (5) Claim 1 now recites that the plate is of harder material than the substrate. Carr discloses no plating material, while Jones uses alumina for the substrate and discloses a coating of chromium on the alumina at column 5, line 12, as noted by the Examiner. But chromium is not harder than alumina, and there is no anticipation of the new feature. The Examiner is referred to the

attached photocopies from a dictionary and the Handbook of Chemistry and Physics.

Alumina is another name for corundum or aluminum oxide (dictionary). Alumina defines the hardness of 9 on the Mohs scale of hardness, and the Mohs hardness of chromium is 9.0 (handbook), exactly the same as the alumina substrate. On the Knoop scale of hardness, the hardness of alumina is 2100 and the hardness of chromium is 935 (handbook). Thus on one hardness scale there is no difference in hardness, while on the other scale the substrate is more than twice as hard as the coating.

As there is no disclosure of the feature now claimed in either reference, no combination would reach the claims even if the combination were obvious (not admitted).

The other coatings disclosed by Jones, such as polymer, are not harder than the alumina substrate. The Applicant respectfully traverses the Examiner's characterization of polymer as "hard" and requests a citation in support if the Examiner is to maintain that polymer might be harder than alumina.

(6) Claim 1 as amended recites the plate extending to the cutting edge on a single side of the blade. This is not disclosed by Jones, which presents the formation and sharpening of the blade as steps preliminary to coating. The Applicant sees no disclosure of the coatings being formed on a single side of the blade. Jones says that the coatings are applied "in the vicinity of the cutting edge" (column 5, line 9), but that does not imply the Applicant's feature.

- (7) The Applicant sees no disclosure of the subject matter of claim 2, and the Examiner has not pointed out where in the references that subject matter might be.
- [4] Claim 4 was rejected over Jones '337 in view of Carr and Lane. This rejection is respectfully traversed. The Applicant assumes that the Examiner meant Lane et al. '379, not Lane '329.

Lane '379 teaches glass for a coating, not for a substrate, and therefore does not anticipate claim 4. It is noted that Lane et al. teaches against the new feature of claim 1, that the plate extends to the cutting edge on a single side of the blade.

- [5] Claim 5 was rejected over Jones '337 in view of Carr and Lane. This rejection is respectfully traversed on the grounds above relating to the base claim, and on the further grounds that Jones discloses polymer is for lubricity, and substituting ceramic for the polymer would not improve lubricity.
- [6] Claim 6 was rejected over Jones '337 in view of Carr and Fischbein '342. This rejection is respectfully traversed on the grounds above relating to the base claim, and on the further grounds that the thickness of a polymer layer is immaterial to any hard layer such as a chromium layer, so there is no teaching toward the Applicant's claims.

Allowance of all claims under consideration is respectfully solicited.

Respectfully submitted,

Nick Bromer

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Attachment (FOUR PAGES): Pages from dictionary and handbook.

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (703) 872-9302) on August 22, 2002.

Nick Bromer (reg. no. 33,478)

Signature Nick Bromer

trical

al tis's m5/; Ii. El tes's m6/). Music, high. —n. 2. in altissimo, in the second of treble staff. [< 1t. iii., highest, equiv. +-issimo super! suffix] ti codi/, -tysimo super! suffix beight above ty point on the surface or in the 3. satent or distance upward; beight: The ris or not of suffix bedy above the horison. a perpendicular distance from the vertex the side opposite the vertex. b. the line ritox of a figure perpendicular to the base titudes a high point or region: mountain ligh or exalted position, rank, etc. [< 1, v. to alifus) high + 4-1-1-400 -runs] height. —Ant. 2. depth.

height.—Ant. 2. depth.
'al, an adjustable sundial utilizing the
sun, at a given latitude and time of year,
talling the time. Of, direction dist
(at/t tod/nn). -ty07d/-), adj. relating
height. [< L altifadin- (a. of altifad))

1. 2] -tos, adj. Music, -n. 1, the lowest contraite. 2. the highest male voice; 3, a singer with such a voice. 4, a nusita voice, 5, he second highest of the mixed vocal chorus, or the voices or perispert. 8, the second highest instrument maical instruments, as the viola in the viola althora in the cornet family. —adj. ertaining to, or having the tonal range of 4 a musical instrument) second highest in sideal instruments also sucond highest in which in the cornet family. ideal instruments: alto suxophone.
) high]
miti-: altostratus.

Music. a sign locating middle C on the be staff, Also called viola slef. See illus. clef.

oter, and the second se is castella/nus, n. altocumulus cas-sorol, an altocumulus cloud having its d like a crenelated tower. Also, alto-calla/tus.

18 floo/cus, pl. altocumulus flocous. tocumulus cloud having its summit in the cumuliform tuits or masses.

is lenticular'is, pl. sitogumulus len-terrol an sitocumulus cloud having at its y outlined lenticular shapes and some-lrisation.

y outsined sentential suspect and some-lies stratifor/mis, pl. altocumulus Motomol. an altocumulus cloud consisting or more horizontal layers. (Olice gethiam), acc. 1. wholly; entirely; die. 2. with all or everything included; nied altogether to twenty dollars. 3. with ing considered; pa the whole. Allogether, er. —n. 4. In the altogether. Informal, e phone rung the had just stepped out of the a in the altogether. [var. of ME altogether man] —altogether. [var. of ME altogether lated and adverb, altogether means is the adverb, altogether means all togethers, as an adjective phrase, up" (They were all together in the kitchen), olikhorn.

althorn.

1. a city in 9W Illinois. 43,047 (1960).

inE), n. a metropolitan district of Ham-rmany: formerly an independent city. 50/na), n. a city in central Pennsylvania

a town in NW Georgia, 2526 (1960).

O (al/tō ri i5/vō), n., pl. -vos. See high alto-rilievo. (Hi/tō në lye/vō), n., pl. al-ti-ri-lie-vi). Italian, the high relief.

3). Italian, the high relief.

(al/10 strk/tss), n., pl. tus. Materral, ass characterized by a generally uniform layer, lighter in rolor than nimbostratus at cirrostratus; of medium altitude, about at [Auro-+ stratus]

stip/el), adi. Ornith, halplass at hatching parantal care for a period of time. Of, NL altitoid(its). L altitoid: (e. of altitude), to al- feed (see aliment) + didentification of the principle of practice nears for or devotion to the walfare of to spoism). (< B altitudes < It altitudes (L altitudes). It altitudes (L altitudes). It altitudes (L altitudes). A consequence of the spoismon. (< B altitudes < It altitudes). The number of the spoismon of

rouser) + resonunselfishly concerned to to the weigner of others (opposed to formation from ALTRUISTIC)

l'uro istik), ad. unselfishly concerned to the welfare of others (opposed to sgo-sa) + -isrto] --al'truis'dreally, adv. ble generous, philanthropic; disinterested,

bitm/itm/itm/, the science of measuring al-um (al/am), n. Chem. 1, Also called aiuminum allu/minum potas/sium sulfate, Chem. alum patashalum, potashalum, potashal

of L shimen alum]

alumina coment, a quick-setting coment with a large bauxite content.

aluminate content.

bluminate (a loo/mo nāt/), n. 1. Chem. a salt of the acid form of aluminum hydroxids, containing the group A(O₂-pr A)O₂-2. Mineral a metallic oxide combined with alumina. [ADMEN + ATE²]

alu/mina trihy/drate, Chem. a white, crystalline, water-insoluble solid. A[O₂:3HgO, used chiefly in the synthesis of aluminum salts.

aluminum.

a-lu-mi-nize (a life/mo niz/), s.t., -nized, -niz-ing, to test with aluminum. Also, esp. Bril., aluminie. [atumine- a combining form of aluminum, used esp. before a consonant: Gluminosilicais. Also, esp. before a vowel, alumin-.

Blumimogra-phy (e100/menograf8), n, Print, algraphy. [ALUMIN-+-0-+-GRAFRY] —s-iu-mi-no-graph-io (e100/meno-graf/ik), adj.

aluminum bo'rate, Chem. a white, granular, water-insoluble powder, 2AlgO-HgO: 8HgO, used chiefly in the manufacture of crown glass.

aluminum borohy/dride, Ohm. a volatile liquid, Al(BH4), that ignites sponsaneously in air and recots vigorously with water to form hydrogen, used chiefly in organic synthesis.

alu'minum brass', an alloy of about 76 p copper, 2 percent aluminum, small amounts of cluments, and the balance zinc.

elements, and the belance zinc.

alu/minum bronze/, any of several alloys containing a high percentage of copper with from 5 to 11 percentage at high percentage of copper with from 5 to 11 percentage and other cloments. Also called albronze, alu/minum car/bide, Chem. a yellow with crystalline solid, Al.Cs, that reacts with water to form methans. alu/minum chio/ride, Chem. a yellow-white crystalline, water-soluble solid which in its white hydrated form, AlCis 61s20, is used chiefly as a wood preservative and in its yellow-white anhydrous form, AlCis, chiefly as a catulyst.

Alvino

—Usago. See alumnus,
a.1um.nus (s lum'nos, n. pl. -ni (-ni). A graduate or former student of a specific school, college, or university.
[< L: 10ster son, pupil, aquiv. to al. (s. of alers to feed, support) + -u. + -mnus, orig, mastive participlal suffix, akin to Gk -meno; see Presidential at Alumnus (plural Alumnus) and a formale graduate is an Alumnus (plural Alumnus). When referring to male and formale graduate together, the masculine form Alumni is used.
Alumnus, When referring to male and formale graduates together, the masculine form Alumni is used.
Alumnus, saxiriagaccous herbs of the genus Hauchera, esp. H. americand. 2, the root of any of the flant, used as an astringent. S. Also called chocolsteriower, a percandal harb, Geranium maculaium, of the castern U.B., having rose-purple flowers. [Alum + Root]

Chiefly Brit. aluminuse.

B-lu-mi-nite (e) 1807ms nit/), n. a mineral, hydrous aluminum sulfate, occurring in white, chalky masses.

Aluminum sulfate, occurring in white, chalky masses.

Aluminum sulfate, occurring in white, chalky masses.

Aluminum i-tum (ally sun aluminum, ally mineral), n. adi. Chiefly Brit.

aluminum.

Aluminum (ally mineral, a hydrous sulfate of potassium and aluminum, KAls(\$04)s(0H)s, commonly occurring in line-grained masses. [< F size (< tract with aluminum, Also, 6sp. Brit., aluminise.]

Laigmen alum) + -its]
a-lumo(801 (a) 100 /na jon), n. a mineral, hydrous sulfate of aluminum, Ais(804):18H:0, cocupring as a white, (ibrous crust on quarry of mine walls. (< Faun (800 alumnes) + -0- + -0en]
alume (al/ypr. s) 10dr/), n. a passageway, as the walk along one side of a cloister. Also, allure, [ME 4(0)ur < OF 4/00 passage, equiv. to ale walk (soc aller) + -or -uma!

Elveol-, var. of siveole- before a vowel.

alveol-, var. of alveole- before a vowel.

alveole. (alveyle), n., pl. -lae (-la). Bot., Zool.

1. a small cavity, coll, or pit on the surface of an organ.

2. an alveolus. [< NL; l. alveolus; see alveolus]

alveoler (alveolus or to alveolu. 2. Phonel, arduulated with the tongue bounding or close to the alveolar ridge, as i. d. n. gingival. —n. 8. Phonel an alveolar sound. [alveol- + ax] —alveolarly, abv.

alveolar arch/, the part of the upper or lower jawbone in which the tunth are set.

alveolar ridged. the ridgelike border of the upper

awoone in which the tend are set.

alve/olar ridge/, the ridgelike border of the upper and lower laws containing the sockets of the testh. Also called alve/olar proc/ess.

al-ve-o-late (al v8/o lit, -iEt/), adj. having alveoli; deoply pitted, as it honeycomb. Also, al-ve/o-lated [< L alrealdt(us). Hee alveol. - Alet] —alve/o-lated from the process.

tion, n.

alveolo-, a combining form of siveolus: alveoludental, Also, ap. befors a vowel, siveol-, alveolus: alveoludental, alive-o-lus (al ve's las), n., pl. -li (-li'). Anal., Zool, I. a lithe cavity, pt. or cell, as a cell of a honeycomb.

A an air cell of the iungs, formed by the terminal dilution of biry air pussagoways. S. one of the terminal secretory units of a racemose gland. S. the sacket within the jawbone in which the root or roots of a tooph are set. [< L., cajiv. to also (us) concave vessel + -blus. var. of -blus -ulus]

Alvesta (al vēr'a), n. a sirl's given name, form of to the welfare of others (opposed to see to them (opposed to see the three seeds).

As a catalyst.

As a catal

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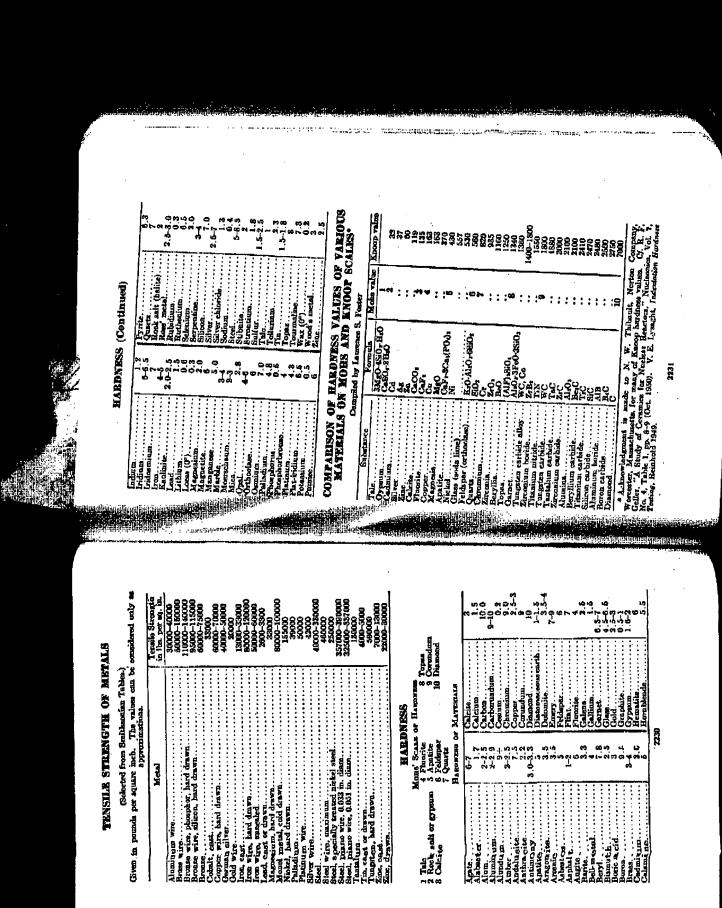
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